Wiley

PHILIP MORRIS INCORPORATED

INTER-OFFICE CORRESPONDENCE

RICHMOND, VIRGINIA

To: E. Pierce

Date: January 23, 1981

From: K. A. Stover

Subject: QUALITY ASSURANCE SIEVE TEST

Subject:

What changes can be made to the present sieve test to increase reliability of results?

Conclusions:

1. Switch from rectangular Philip Morris sieves with industrial grade wire mesh to round sieves using testing grade screen made by a sieve screen manufacturer.

2. Continue using the 5 minute shaking time, the 150 gram sample size, and the 3/4" shaking stroke.

3. Mesh combinations other than the 10, 20, 30, 50 sizes presently used can give better, more reliable results. Based on engineering tests, the U.S. Standard #6, 12, 20, 35 mesh combination seems to be the best one tested. It breaks up the sample fairly evenly and was more repeatable from set to set than the other combinations tested.

Recommendations

Additional testing should continue with the U.S.A. standard #6, 12, 20, 35 screens to study the effects of time and mesh tolerance on sieve results. Also, testing should be done to decide what manufacturer will be used to supply the sieves. After a supplier is chosen, the sieves should come only from that manufacturer.

Highlights

The present sieve test is inadequate in representing the samples of tobacco products with sufficient reliability and repeatability. Tests using round sieves manufactured by Newark Wire Cloth Company using testing grade wire mesh were performed in the Q.A. DIET lab. Three types

(Cont'd.)

of tests were performed; 1) affect of sieving on sample moisture, 2) affect of sieving on particle sizes, and 3) comparison between sets of sieves. Results show that although the sieve test has many drawbacks that prevent it from being completely foolproof as an indicator of individual particle size, the test can be standardized to produce a realistic production oriented test to provide a useful indicator of product quality. Tables and graphs of data from these tests appear in the attached report.

K. A. Stover

/jm

Attachment

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